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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,409	03/27/2002	Wilhelm Stork	P/4074-4	1789

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EXAMINER

CHATTOPADHYAY, URMI

ART UNIT PAPER NUMBER

3738

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/009,409

Applicant(s)

STORK ET AL.

Examiner

Urmi Chattopadhyay

Art Unit

3738

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit: 3738

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 9/22/03 has been entered as Paper No. 9. Changes to the title, specification, claims and Figure 2 have been approved by the examiner. Claims 6 and 7 have been canceled. All claims pending, which include 1-5 and 8-17, are being considered for further examination on the merits. This office action is of non-final status because of the following new prior art rejections.

### ***Oath/Declaration***

2. The oath or declaration is defective. The office has not received the new declaration, so a new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is still required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the application as a 371 of PCT/EP00/04888 filed on 5/29/2000. The declaration is defective also because the filing date indicated, 12/10/01, is incorrect. It should be changed to 3/27/02.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3738

4. Claims 1-5 and 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stork et al. (EP 0537643 A1, as cited in last office action; reference is made to English translation) in view of Cohen (USPN 5,121,980, copy provided with last office action with citation on PTO-892) and Portney (USPN 5,225,858).

Stork et al. discloses an intraocular lens with all the elements of claim 1, but is silent to the difference in the path length of the optical path between adjacent concentric zones being an integral multiple of  $n=2$  or more of the design wave length and of the concentric zones being arranged in a lens part having an aspherical curvature profile effect. See page 5, third paragraph for an IOL with an optical lens part that comprises a central lens area and at least one annular lens area surrounding the central lens area, the central lens area and the at least one annular lens area forming at least one common focus and the annular lens area comprising concentric annular zones. See page 10, lines 1-8 of the amendment filed 9/22/03 for applicant being in agreement with Stork et al. disclosing these limitations. In this embodiment of Stork et al., one of the two focal points is suppressed due to a great difference in intensity such that the diffractive microstructure profile acts as a monofocal lens for the design wavelength. Cohen teaches that it is old and well known in the art that a phase zone plate having echelettes having a depth that accord with the design wavelength will have a physical depth (optical path length) that follows the relationship  $\lambda/(\eta'-\eta)$ , wherein  $\eta' \approx 1.43$  and  $\eta \approx 1.33$  and  $\lambda$  is the design wavelength. This means that the difference in the path lengths of optical paths between adjacent zones (echelettes) is an integral multiple of greater than  $n=2$  of a design wavelength. In the case of yellow light where  $\lambda$  is 555 nanometers, the optical path length will be 5550 nanometers, which is ten times that of the design wavelength. See column 2, lines 30-48. This phase zone plate will be a

Art Unit: 3738

monofocal lens device for the design wavelength because all of the light of the design wavelength is directed to the first order focal point along the axis of the optic zone, and thus multiplicity is lost, i.e., not enough light intensity is directed to at least two focal points to provide useful images at those focal points, and a multifocal lens is not possible. See column 10, lines 17-22. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to look to the teachings of Cohen to make the IOL of Stork et al. a monofocal lens by following the relationship  $\lambda/(\eta' - \eta)$ , such that the optical path length between adjacent concentric zones is  $n=2$  or more. This great difference in path length would suppress one focal point by directing all the light to a second focal point, which is the first order focal point.

Stork et al. is also silent to the optical lens part having a meridian section provided with an aspherical curvature profile and the concentric zones being in the lens part in which the aspherical curvature profile has an effect. Portney teaches an IOL with a central lens area and annular lens area having concentric annular zones surrounding the central lens area. See abstract. The concentric zones are in a meridian section of the lens part with an aspherical curvature profile in order to compensate for spherical aberrations. See columns 4-5, lines 59-4. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to look to the teachings of Portney to modify the IOL of Stork et al. such that the concentric zones are in a meridian section lens part in which a aspherical curvature profile has an effect in order to compensate for spherical aberrations.

Claims 2 and 3, see page 5, third paragraph for sawtooth geometry of zones setting difference in path length.

Art Unit: 3738

Claims 4, 10 and 11, see Figure 12 and page 5, last paragraph for zones on at least one side of lens body, outer lens edge with *approximately* semicircular cross section, and smooth surface central lens area.

Claim 5, see page 5, line 17 for refractive component.

Claims 12-16, see page 5, third paragraph for bifocal lens with additional diffractive zones and respective limitations.

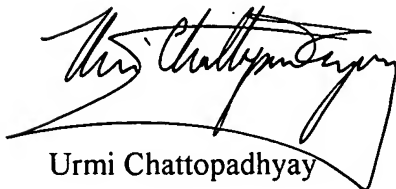
Stork et al. is silent to the specific limitations of the annular lens area having an annular width of approximately 0.8 mm to 0.9 mm and the central lens area having a diameter of approximately 4 mm, as required by claims 8, 9 and 17. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the dimensions of the IOL of the specified lengths because applicant has not disclosed that the specified width and diameter provide an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with widths and diameters of other lengths because the ability for the IOL to produce a higher quality image on the retina is not affected by the width and diameter of the annular lens area and central lens area, respectively. Additionally, these dimensions will vary from patient to patient to meet individual needs and to fit individual pupil sizes. Therefore, it would have been an obvious matter of design choice to modify Stork et al. to obtain the invention as specified in claims 8, 9 and 17.

***Response to Arguments***

Applicant's arguments, see page 9, last paragraph, to the end of page 10, filed 9/22/03, with respect to the 102(b) rejection of claims 1-7 and 10-16 over Meur (EP 0276331) and Stork et al. (EP 0537643) have been fully considered and are persuasive. The 102(b) rejection of these claims has been withdrawn.

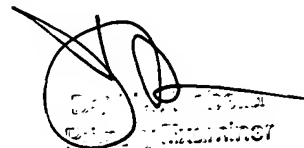
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ms. Urmi Chattopadhyay whose telephone number is (703) 308-8510 and whose work schedule is Monday-Friday, 9:00am – 6:30pm with every other Friday off. The examiner's supervisor, Corrine McDermott, may be reached at (703) 308-2111. The group receptionist may be reached at (703) 308-0858.

Should the applicant wish to send a fax for official entry into the file wrapper the Group fax number is (703) 872-9306. Should applicant wish to send a fax for discussion purposes only, the art unit fax number is (703) 308-2708.



Urmi Chattopadhyay

Art Unit 3738



Corrine McDermott  
Supervisor